Table. Serum progesterone, Estradiol-17 β and LH concentration at different days of estrous cycle during superovulation in buffaloes (Mean ± SE)

Day of estrus	Progesterone (ng/ml)		Estradiol-17 β (pg/ml)		LH (ng/ml)	
	Control (n=7)	Treated (n=7)	Control (n=7)	Treated (n=7)	Control (n=7)	Treated (n=7)
9	2.57 ±0.49	3.75 ±0.65	4.15 ±0.88	4.75 ±1.36	--	--
13	2.48 ±0.78	5.77 ±1.07*	5.65 ±0.81	5.16 ±0.87	--	--
14 (11 am)	0.51 ±0.09	0.66 ±0.15	8.74 ±1.06	9.90 ±1.95	8.267 ±0.346	8.74 ±0.427
14 (3 pm)	0.42 ±0.08	0.32 ±0.03	10.39 ±1.22	11.10 ±3.07	8.883 ±0.452	11.97 ±1.267*
14 (7 pm)	0.37 ±0.08	0.41 ±0.08	11.72 ±1.42	13.57 ±4.62	12.321 ±0.807	15.57 ±1.388
14 (11 pm)	0.46 ±0.09	0.29 ±0.07	13.56 ±1.90	16.78 ±3.05	12.955 ±1.011	16.50 ±1.513
15 (3 am)	0.42 ±0.13	0.32 ±0.06	16.74 ±3.31	18.83 ±2.68	13.325 ±1.142	15.58 ±1.397
15 (7 am)	0.45 ±0.12	0.33 ±0.1	23.96 ±5.41	25.16 ±8.26	12.49 ±1.313	15.66 ±1.554
15 (11 am)	0.45 ±0.11	0.35 ±0.12	15.50 ±3.73	13.69 ±6.29	10.205 ±1.264	13.52 ±1.390
15 (3 pm)	0.46 ±0.16	0.30 ±0.1	12.05 ±1.59	13.06 ±4.26	8.232 ±0.799	10.50 ±1.703
15 (7 pm)	0.51 ±0.09	0.33 ±0.13	9.43 ±1.22	9.75 ±2.96	7.223 ±0.452	8.29 ±0.633
16	1.07 ±0.15	0.40 ±0.03	7.06 ±0.92	9.06 ±2.26	--	--
20	9.28 ±2.92	10.99 ±2.89	3.89 ±0.72	6.37 ±2.64	--	--

*Significant (P<0.05)

comparable to the previous findings (Datta *et al.* 1992) in cows. A rise in progesterone concentration in superovulated animals following superovulatory estrus indicated formation of multiple corpora lutea following multiple ovulations (Sarvaiya *et al.*, 1997).

The significant positive correlation (r=0.788, P<0.05) between progesterone concentration on day of embryo collection and ovulation rate of control group in this experiment was in accordance with Beg *et al.* (*loc cit.*) The level of progesterone on day of embryo collection had significant positive correlation (r=0.846, P<0.05) with number of ova/embryo recovered in treated animals, which was similar to report of (Arosh *et al.*, 2001).

The concentration of estradiol (Table) before initiation of superovulatory treatment in both groups was similar. Estradiol concentration showed an increasing trend between FSH injections in superovulated animals, within 24 h of PGF2a administration, the estradiol concentration reached the peak (Table) during induced estrus in both groups. The increased concentration of estradiol between FSH injections was due to the development of multiple follicles (Datta *et al.*, *loc cit.*).

A highly significant negative (r=-0.887, P<0.01) correlation observed in present study between estradiol concentration before supervulatory treatment and total ova/embryo recovered in the control group may be because of detrimental effect of dominant follicle on the mobilization of smaller follicles stimulated to grow by the injection of exogenous gonadotropins.

The mean serum luteinizing hormone concentration (Table) 26 h after prostaglandin administration in both groups was higher than an earlier report Arosh *et al.*, (*loc cit.*). A significant higher concentration was recorded in treated group (Table) 30 h after prostaglandin administration. Schallenberger *et al.* (1990) reported preovulatory surge of LH (14.7 ng/ml) with PMSG treatment within 8 h after onset of estrus. Luteinizing hormore concentration decreased 50 h after prostaglandin administration and at 58 h post-prostaglandin administration, it was minimum in both treated and control groups (Table). The decrease in serum LH concentration was coincidental with increasing progesterone concentration Kaneko *et al.*, (1992).